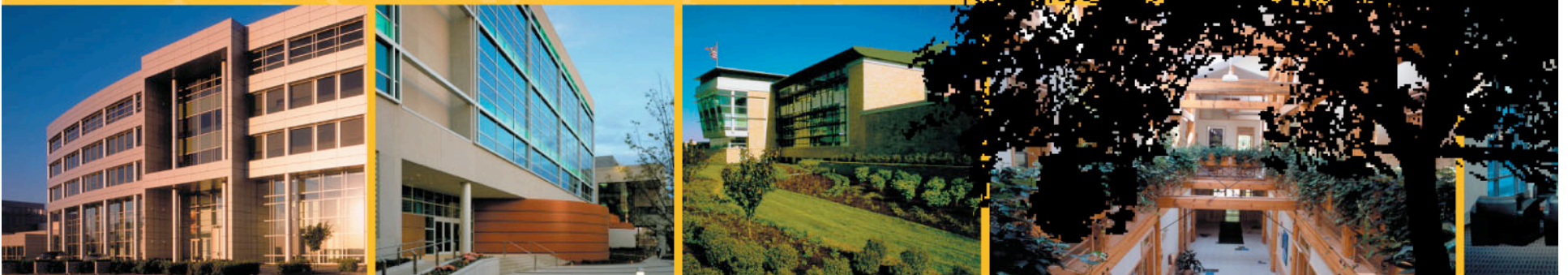




# An Introduction to **LEED® for Existing Buildings**

**December, 2004**



# LEED Green Building Rating System™

## *under development*

- LEED-CS  
(core & shell)
- LEED-H  
(homes)
- LEED-ND  
(neighborhood developments)

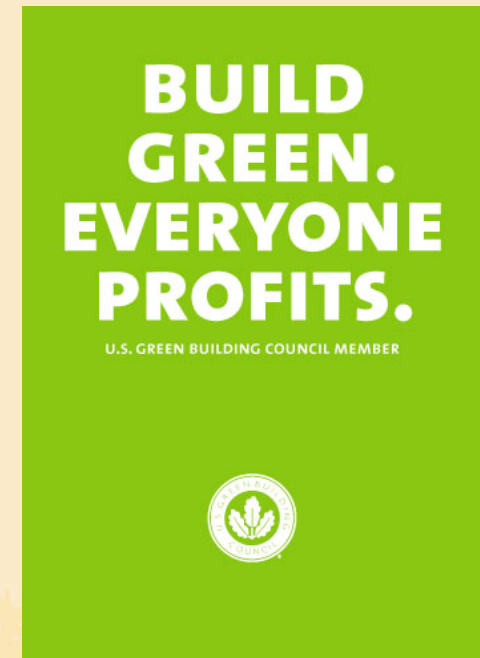
## **available**

- LEED-NC  
(new construction)
- LEED-CI  
(commercial interiors)

- **LEED-EB**  
**(existing buildings,  
operations and  
maintenance)**

# intentions of the EB rating system

- provide a voluntary standard for green buildings to improve performance while reducing overall operating costs
- measure and verify green process improvements, upgrades, and maintenance
- promote whole-building, integrated, sustainable design
- recognize leaders
- raise consumer awareness



## transform the built environment!

# when to use LEED-EB

- initial certification of existing buildings
- ongoing re-certification of existing building first certified under LEED-EB
- ongoing re-certification of existing building first certified under LEED-NC



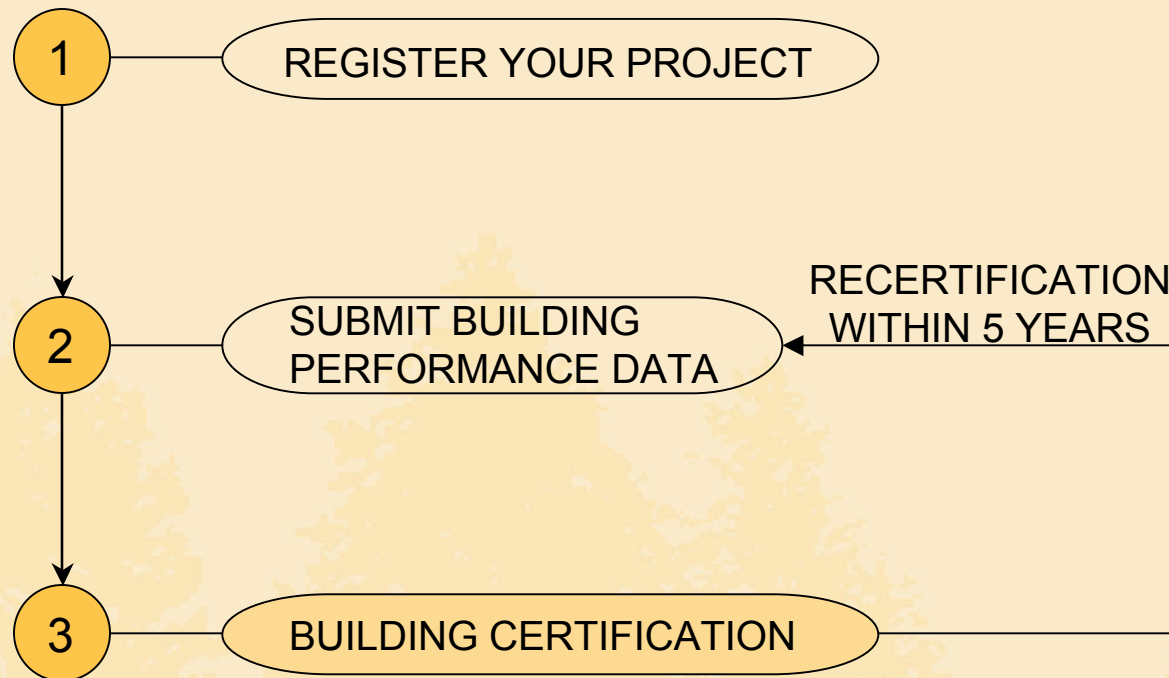
King Street Center, LEED-EB Gold



# how LEED-EB compares to LEED-NC

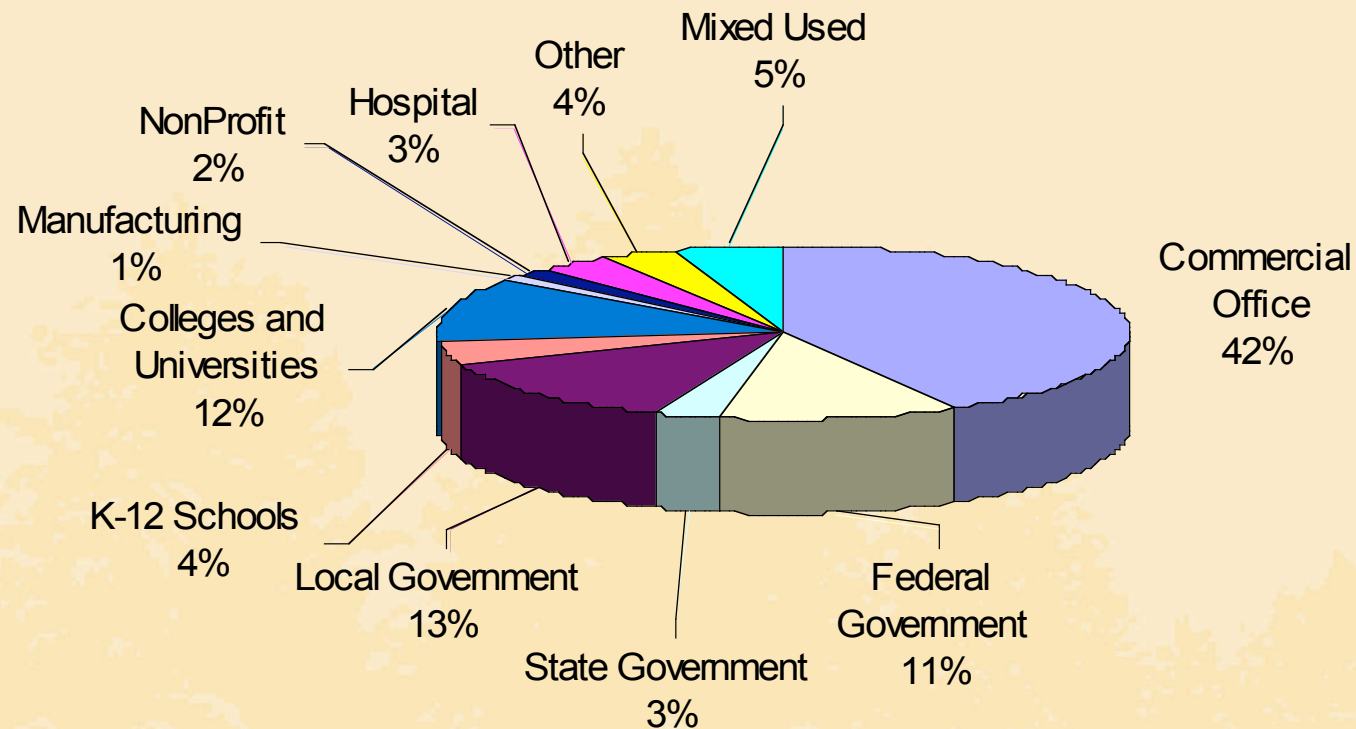
- LEED-EB
  - building operations and upgrades
  - facility managers & support companies
  - ongoing/continuous process (life of building)
- LEED-NC
  - building design & construction
  - architects & builders
  - one-time event

# steps to LEED-EB certification



# LEED-EB market transformation

## LEED-EB Registered Products by Building Type



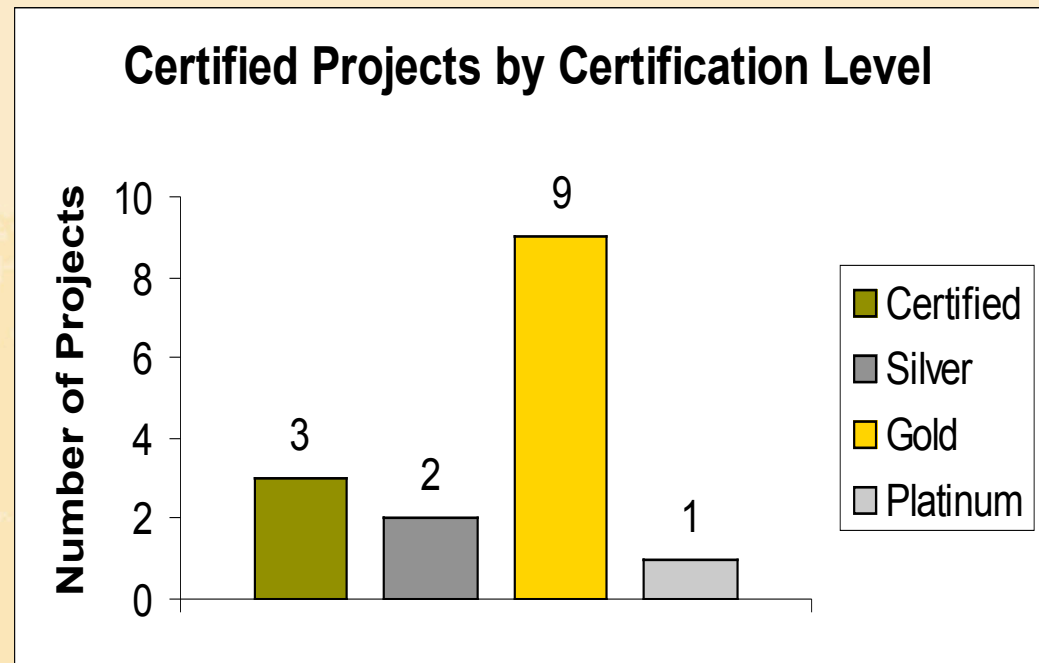
# LEED-EB certified buildings

Number of Buildings: 15

Floor Area of Buildings: 5,604,131

Ownership of Buildings:

Non-Profit	1
State	1
Business	8
Colleges & Universities	2
Local Government	3





# LEED-EB categories & points

• sustainable sites	14
• water efficiency	5
• energy & atmosphere	23
• materials & resources	16
• indoor environmental quality	22
• innovation in operation & upgrades	5

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**TOTAL POINTS AVAILABLE**  
**85**

# measuring achievement

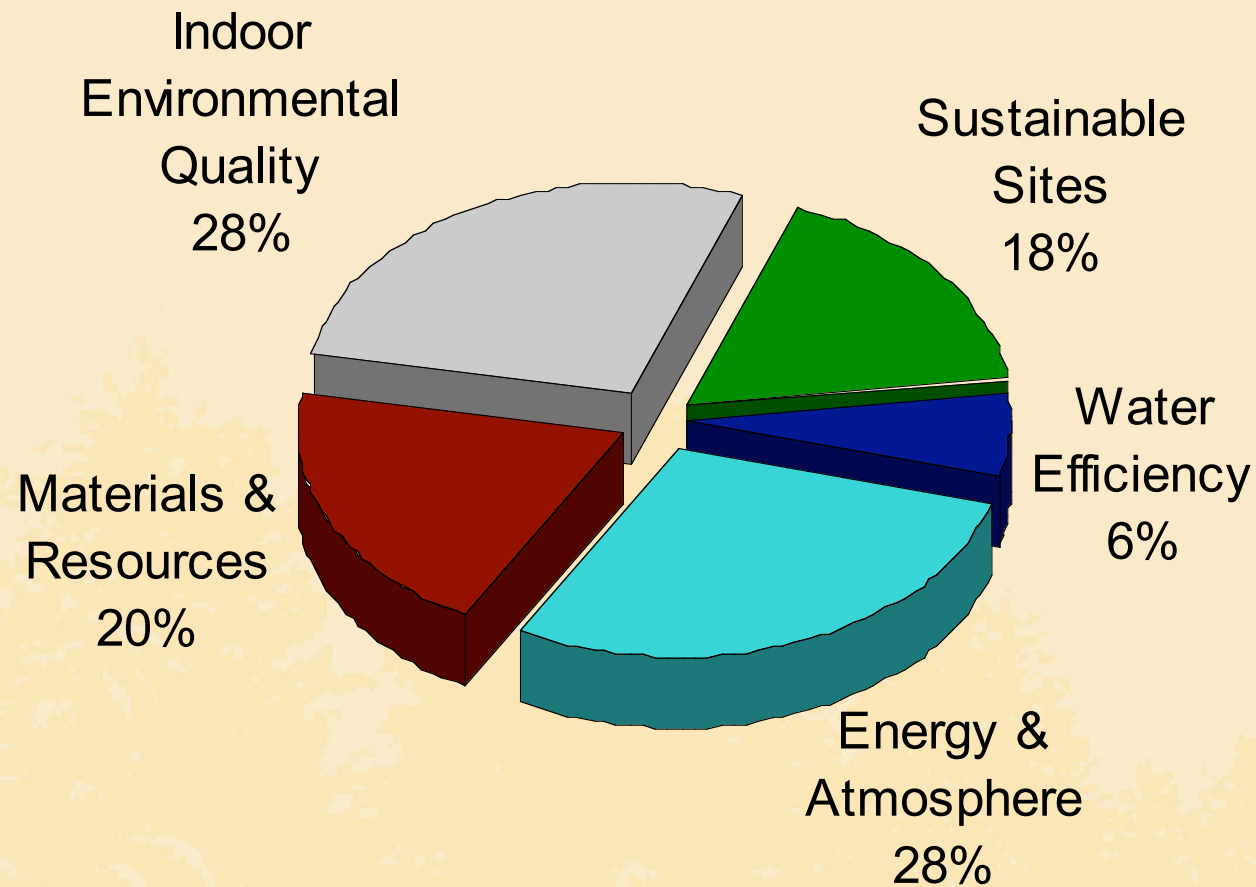
Points are awarded under LEED-EB when the requirements of a credit are satisfied. Total points awarded determines the level of certification.



## LEED-EB: levels of certification

Certified	32-39 points
Silver	40-47 points
Gold	48-63 points
Platinum	64-85 points

# LEED-EB point distribution



# sustainable sites goals

- continue to use existing buildings and sites
- protect natural and agricultural areas
- reduce need for automobile use
- protect and/or restore sites





# water efficiency goals

- reduce the quantity of water needed for the building
- reduce burden on potable water supply and treatment facilities



# energy and atmosphere goals

- high levels of energy efficiency and system performance
- encourage renewable and alternative energy sources
- support ozone protection protocols



# materials and resources goals

- reduce the amount of materials used
- use materials with less environmental impact
- reduce and manage waste





# indoor environmental quality goals

- maintain good indoor air quality
- eliminate, reduce, manage sources of indoor pollutants
- ensure thermal comfort and system controllability
- provide for occupant connection to the outdoor environment





# LEED-EB certified building case studies

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# Thomas Properties Group

Cal/EPA Headquarters

Sacramento, CA



LEED-EB Platinum 2004

## Building Statistics

Project Costs:	\$1,186,000
Annual Net Savings:	\$610,300
ROI:	1.9 years
Size:	950,000 ft <sup>2</sup>
Building Type:	Office

## Sustainable Sites

Alternative Transportation: Easy access to bus lines/light rail; Bicycle storage/changing facilities serving 7% of building occupants; 24 charging stations for alternative vehicles; Program encouraging telecommuting and carpooling.

## Water Efficiency

Water Use Reduction: High efficiency fixtures, waterless urinals, and other measures reduced water use by more than 20% below baseline.

## Energy & Atmosphere

Onsite Renewable Energy: 736 photovoltaic panels generate electricity that is delivered to the utility grid

## Materials & Resources

Occupant Recycling: 210 3-in-1 recycling bins are located throughout the building, helping achieve a 50% waste stream recycling rate.

## Indoor Environmental Quality

Green Cleaning: Uses cleaning products that have received the Golden Seal Charter Team certification from the State of California.

# JohnsonDiversey

## Global Headquarters

### Sturtevant, WI



**LEED-EB Gold 2004**

### Building Statistics

Project Costs:	\$73,800
Annual Net Savings:	\$137,320
ROI:	0.5 year
Size:	277,440 ft <sup>2</sup>
Building Type:	Office/Lab

### Sustainable Sites

Reduced Site Disturbance: Turf grass, prairie grass, and ponds cover 93% of the sites; open area.

### Water Efficiency

Water Efficient Landscaping: The irrigation system serving the JohnsonDiversey grounds operates solely on captured rain and recycled site water, using no potable water in any application.

### Energy & Atmosphere

Performance Measurement: Johnson Controls Metasys building automation system monitors and measures a number of building systems.

### Materials & Resources

Optimize Use of Alternative Materials: Purchasing policies target the use of alternative materials including salvaged materials, recycled content, local/regional materials, and certified wood.

### Indoor Environmental Quality

Controllability of Systems: JohnsonDiversey installed personal environment modules (PEM) in 93% of the total building office areas.

# Why Certify?

## triple bottom line benefits

*“Through significant reduction in operating expenses, I have determined that green building operation is not only good for the environment, it is good for the bottom line.”*

– Craig Sheehy, CPM, Director of Property Management, Thomas Properties Group, LLC; Cal/EPA, LEED-EB Gold

## Build Green. Everyone Profits.



# environmental benefits

- reduce the impacts of natural resource consumption
- buildings represent:
  - 39% of U.S. primary energy use
  - 70% of electricity consumption
  - 40% of raw materials use globally
  - 12% of potable water consumption

# economic benefits

- increase building valuation and ROI
- optimize life-cycle economic performance
- reduce operating costs
  - according to U.S. EPA research, tenants can save about 50 cents per square foot each year through strategies that cut energy use by 30%. This can represent a savings of \$50,000 or more in a five-year lease on 20,000 square feet

# occupant benefits

- decrease vacancy, improve retention
- reduce liability
- high worker productivity
  - a study by Carnegie Mellon University measuring the relationship between increased lighting control and productivity showed an average increase of 7.1% in productivity

# how to get started

- visit [www.usgbc.org/LEED](http://www.usgbc.org/LEED) to learn more about LEED-EB, review a copy of the rating system, and check out the FAQ
- attend a LEED-EB Workshop
- get involved with your local chapter
- register your LEED-EB project online at [www.usgbc.org/LEED](http://www.usgbc.org/LEED)
- contact us at [leed-eb@usgbc.org](mailto:leed-eb@usgbc.org)

For more information  
please visit  
[www.usgbc.org](http://www.usgbc.org)